

SECTION 8 SCOPE OF SERVICES

The City of Boston, acting through the Commissioner of the Boston Transportation Department (the Department or BTB), invites proposals from qualified consultants (the Consultant) to provide engineering, landscape design, and urban design services to prepare plans, specifications, estimates, construction bid documents, and construction phase services related to the reconstruction of Melnea Cass Boulevard in Roxbury, MA as shown in Figure 1.

The Consultant shall develop a Conceptual Design based on the preferred design developed by the City of Boston for *Melnea Cass Boulevard* and in concert with the *COB Roxbury Strategic Master Plan (2004)*, and the *EOT Urban Ring Phase 2 RDEIR/DEIS (2008)* then advance the Conceptual Design to 100% bid documents for reconstruction. This project will be advertised through the City of Boston administrative procedures identified by BTB in consultation with the Boston Public Works Department (BPWD).

Please submit seven (7) bound paper copies and one (1) electronic copy on a disk of the proposal to the Office of the Director of Policy and Planning, Boston Transportation Department, Room 721, Boston City Hall, 02201, **before 12:00 p.m. (noon) on February 2, 2011**. The City will not consider any proposals submitted later than this time.

There may be a mandatory interview in the week of **February 14, 2011** to be scheduled by BTB.

I. INTRODUCTION

The corridor between Columbus Avenue and the Southeast Expressway known today as Melnea Cass Boulevard was originally a planned link of the never-constructed Mass DPW Inner Belt Highway Project (I-695). The ill fated circumferential Inner Belt was intended to ring the central core of Boston connecting radial roadways including the proposed but never-constructed Southwest Expressway (I-95). Both projects were ultimately cancelled due to overwhelming community and political opposition. Although the project was officially cancelled in 1971, demolition for the highway right of way had already begun resulting in the wide swath we see today.

Melnea Cass Boulevard has emerged as a major transportation corridor linking Roxbury with Ruggles Station, the Longwood Medical Area, Massachusetts Avenue, the Boston Medical Center and the Southeast Expressway. The multi-lane right of way accommodates over 30,000 vehicles on an average weekday. The right-of-way includes a reserved corridor for future transit and/or bicycle path improvements along the northern edge.

The approximately one mile stretch of Melnea Cass Boulevard is located in the Boston neighborhood of Roxbury and centers what is commonly referred to as the Crosstown Corridor. The Corridor represents the largest number of buildings and parcels with potential for development within the neighborhood and has already experienced growth and change in the form of a new elementary school, a new headquarters for the Boston Water & Sewer Commission, significant institutional expansion and mixed use private development including a hotel, retail and commercial space. Several publically owned parcels along the corridor are also slated for development in the near future including Parcel P-3, Parcel 8, Parcel 9, and Parcel 10.

Just as the Southwest Expressway highway project gave way to the Southwest Corridor railway project, the remnants and alignment of the former Inner Belt has potential to reemerge as a multi-modal arterial roadway inclusive of bus rapid transit, bicycle lanes and a more inviting pedestrian environment.

A. Background and History

Originally settled by English colonists in 1630, the town of Roxbury was connected to the original Boston peninsula by a narrow strip of land known as the Boston neck. In addition to having natural resources like farmland, timber and a brook for water power, the town's position along the only land route into Boston gave the settlement a strategic trade and military advantage. The colonists soon began constructing buildings and roads that still define the neighborhood today. Washington, Dudley, Centre, Roxbury, and Warren streets were all laid out in the first years of settlement. The town center was located at John Eliot Square, where the first meetinghouse was built in 1632, with its burying ground nearby at the corner of Eustis and Washington streets.

In the 17th and 18th centuries, farming was the basis of Roxbury's economy. The town was locally famous for its fruit trees, and noted varieties were developed on local farms, including the Roxbury Russet apple, particularly prized for cider. From Roxbury's earliest days, commerce centered at Dudley Station, where Washington, Warren, and Dudley streets cross. By the turn of the 20th century, the area was a bustling mix of department stores, residential hotels, silent movie theatres, banks and even bowling alleys designed by prominent Boston architects in a rich mix of revival styles. Dudley Station itself opened in 1901 as the southern terminus of the Boston Elevated Railway, which ran to Sullivan Square in Charlestown and later became part of the Orange Line Authority. Adapted for use as a bus station after removal of the old elevated Orange Line in the 1989, the copperclad Dudley Station is still a major link in the city's public transit network.

B. The Roxbury Community

Until about 1900, Roxbury was a community of English, Irish and German immigrants and their descendants. In the early 20th century, Roxbury became more diverse with the establishment of a Jewish community in the Grove Hall area along Blue Hill Avenue. Following a massive migration from the South to northern cities in the 1940s and 1950s, Roxbury became the center of the African-American community in Boston. Social issues and the resulting urban renewal activities of the 1960s and 1970s contributed to a decline in the neighborhood. However, recent grassroots efforts by residents have been a force behind revitalizing historic areas and creating the Roxbury Heritage State Park. The relocation of the Orange Line and development of the Southwest Corridor Park spurred major investment, including Roxbury Community College, the Reggie Lewis Center, Renaissance Center and the Islamic Society of Boston mosque. Proposed commercial development in Dudley Square, Jackson Square, and near Ruggles Station now promises reinvestment in the form of new housing, shopping, and related consumer services.

Today the greater Roxbury neighborhood continues to boast a diverse population and maintain its status as focal point for African-American culture in the City and the region.

C. Roxbury Transportation, Master Planning, and Development

In crafting a design and working through the community process, special emphasis should be given to ensuring urban renewal mistakes of the past are not revisited. Recent efforts following a community based, smart growth approach to development have resulted in the following planning documents and development proposals:

- The Roxbury Strategic Master Plan- BRA/Community
- The Roxbury Traffic Model- BTM/BRA/Community
- The South Bay Harbor Trail

- Proposed Mixed Use Redevelopment of the MBTA Bartlett Yard-Nuestra Comunidad
- The Dudley Vision Project featuring a new Area B-2 Police Station, Ferdinand Building municipal offices, a Dudley Square Transportation Action Plan, creation of a Mixed Use Development site, Library Improvements
- The Highland Park Transportation Study
- The MassDOT Urban Ring

Copies of documents related to the projects listed above can be obtained from the Director of Planning, Boston Transportation Department or his designee.

II. FUNDING AND MassDOT STANDARDS

This contract is funded through the City of Boston's Capital Plan. It is estimated that approximately \$600,000 will be required to develop a 100% design and bid documents for the concept designs inclusive of contingencies. Bidders to this RFP should take that estimated cost as a guide, understanding that the City of Boston will negotiate a final contract with the winning bidder independent of this estimated costs. In addition, while this contract is being administered by the City of Boston, in order to maintain consistency, all design work and preparation of documents must comply with MassDOT standards.

III. PROJECT ADMINISTRATION

The project is being administered by BTB in collaboration with additional city agencies including:

- Boston Public Works Department (BPWD)
- Boston Redevelopment Authority (BRA)
- Boston Bikes
- Boston Parks and Recreation Department
- Mayor's Office of Neighborhood Services
- Property Management Division and Street Furniture Program
- Office of Budget Management
- Department of Innovation and Technology
- Boston Water & Sewer Commission
- Boston Fire Department
- Disabilities Commission
- Mayor's Office of Environment and Energy
- Boston Environment Department
- Boston Landmarks Commission
- Mayor's Office of Arts, Tourism and Special Events.

Project Management will be provided by the BTB in coordination with BPWD. The Director of Policy and Planning or designated BTB project manager will be the day-to-day point of contact and will coordinate public agency interface with the Consultant Team.

Responsibility for reviewing engineering aspects of the project as well as determination that the final construction drawings and bid documents are acceptable for bidding rests with the City of Boston and, if applicable, with MassDOT and other state agencies.

The Boston Redevelopment Authority will be part of the management team and will be integral to review of urban design concepts and integration of development parcels.

The City's management team will collaborate throughout the duration of the project to ensure that each discipline is appropriately engaged, that project milestones are met, that each milestone product meets the City's standards, and that the final products can be bid and awarded. Note that the appropriate state agencies may also be invited to participate in the process. Invited agencies may include MassDOT, DCR, the MBTA and as necessary, officials from Massachusetts Environmental Policy Act Office (MEPA).

IV. PROJECT LIMITS

For the purposes of this RFP, the expected design and construction area will consist of Melnea Cass Boulevard with the boundaries defined in Figure 1.

V. SCOPE OF SERVICES

A. Summary

The Scope of Services for this project is to finalize a Conceptual Design for Melnea Cass Boulevard, then to advance the Conceptual Design to 100% PS&E, and to provide construction phase services. This will entail providing civil, structural, survey, geotechnical, landscape, and permitting services as needed to support the design. The preparation of a long term maintenance plan will be key to the submission.

The City of Boston has embraced a **Complete Streets** approach to roadway design. City agencies are committed to making Boston's streets **multimodal** and accessible to all users, **green** in terms of promoting sustainable and low-maintenance designs, and **smart** in using existing facilities more efficiently and maximizing technological advances. Consequently, key elements of the design may include:

- Travel lanes and intersections that equally accommodate transit, bicycles and motor-vehicles, safe pedestrian crossings, special provisions for the disabled and use the latest technologies in traffic control signal equipment.
- Wide sidewalks with a safe and comfortable pedestrian environment to encourage walking, the use of LED light fixtures, benches, solar trash receptacles and bus shelters with electronic information panels.
- Permeable sidewalk materials, special paving, street trees with pits using structural cells to provide space for roots to grow and where possible, rain gardens.
- Installation of in-road sensors and video cameras to provide real-time parking and traffic flow information, provision of electric-vehicle charging stations and if required, multi-space smart meters.
- Adapting existing and future infrastructures to accommodate and support the proposed improvements.

In general, as in most roadway reconstruction and streetscape projects, the project may consist of a combination of full-depth construction and cold plane and overlay incorporating the resetting of edgestone; new sidewalks and driveways; new street lighting, including foundations; conduit controls and pull boxes; new drainage structures and/or adjusting and remodeling existing structures; and new and upgraded traffic signals and control boxes.

In April 2010, Mayor Thomas Menino accepted the Boston Climate Action Leadership Committee's report recommending that the Boston community collectively reduce its greenhouse gas emissions by at

least 25% by 2020. The Leadership Committee also recommended measures to reach this goal, many of which addressed transportation issues. In particular, the Leadership Committee recommended that Boston reduce vehicle miles traveled (VMTs) 7.5 percent below current levels by 2020. Consequently, key elements of the design should include emission reducing features as well as mitigating features such as identifying and mitigating storm water and rises in sea-level impacts.

The project will be driven by an open public process, transparent and accountable project management procedures, and extensive inter-agency co-ordination.

B. Tasks

Task 1. Survey / Document Existing Conditions of the Project Area

Using any available documentation from the *Roxbury Strategic Master Plan* and the *EOT Urban Ring Phase 2 RDEIR/DEIS* as a reference, the Consultant will perform an on-site existing conditions and topographic survey on Boston City Base Datum. Final survey shall include at a minimum all the following features within the project area:

- Elevations at one-foot contours;
- Spot elevations where appropriate;
- Benchmark locations and descriptions;
- Wetland resource areas including flood plain and Base Flood Elevations (BFE's) as available;
- All underground utilities including inverts and sizes;
- All overhead utilities;
- All existing surface elements, including but not limited to: street and sidewalk widths; intersection geometries; curblines, curb-cuts, crosswalks and pedestrian ramps; lighting and electrical boxes; streetscape elements such as benches, trees, and bus stops; site walls with heights; traffic control devices; bridges, railroad tracks, subway tunnels, and overpasses with elevations;
- Material conditions survey of the street and sidewalk, including any pertinent conditions immediately (within 5 feet) of the back of sidewalk;
- Signage and pavement markings; and
- Any areaways located and analyzed for structural integrity.

Land survey work and all associated office work, such as plotting field notes, etc. will be performed by the Consultant, and shall include all office work necessary for the plotting and calculating of the field data obtained and the submission of plans.

All survey information will be plotted at a scale of 1" = 20' or other City approved suitable scale and will be made available to the City in hard copy as well as in electronic (AutoCAD) format.

Traffic counts and Synchro files are available in the Roxbury Traffic Model. These will be provided to the consultants. New traffic counts and modeling may be required to accomplish this scope of services in consultation with BTM.

Geotechnical investigation of sub-surface conditions will be required to permit determination of general soil characteristics to support appropriate pavement design and design of subsurface structural systems.

Task 2. Final Conceptual Design Submittal

- Review documents completed during the *Roxbury Strategic Master Plan and Urban Ring Phase 2* process.
- Coordination with established design for the South Bay Harbor Trail.
- Review plans and documents completed for future plans of direct abutters within the project area.
- Work with BTM, abutters, affected agencies, and the Roxbury community to refine and where necessary, redesign the plans shown in the *Strategic Master Plan and Urban Ring Phase 2* to create a Conceptual Design that has the approval of the City and the support of the community. The Conceptual Design will be used as the basis for the Final Design.
- The Final Concept Design submission shall include context or district plans, rendered right-of-way plans, cross sections and at least five “before-after” three 3-D views of the corridor design for agency and public meeting review, identification of all abutters and property lines, motor-vehicle, bus and bicycle lane and intersection alignments, sidewalks widths, street trees and lights placement, curbside parking plan including the location of bus stops and electric vehicle charging stations and opportunities for rain gardens.

Task 3. 25% Design Development and Submittal

Complete and submit the 25% Design for Melnea Cass Boulevard per the City of Boston requirements and requirements of applicable state agencies (e.g., MassDOT, MBTA, DCR, etc.) with jurisdiction over certain design elements. The consultant shall work with City agencies to incorporate design features which promote “green” streets in terms of use of materials, plantings and drainage and “smart” streets in terms of linked traffic signals and use of cameras, sensors and tags.

- Key elements to be completed for a 25% Design include, but are not limited to:
 - Drawings for streetscape, landscaping and special paving elements of the project;
 - Computed horizontal and vertical geometrics;
 - Resolution of any conflicts with underground, surface or overhead utilities;
 - Drainage and grading plans and analysis;
 - Identification of areas requiring structural or geotechnical analysis;
 - Cross sections;
 - Description of affected areaways; if any,
 - Preliminary right-of-way plans that document land ownership in the project areas and identification of all permanent and temporary easement and taking limits and dimensions;
 - MassDOT design exceptions report as needed; and
 - A line-itemed cost estimate of the design.
- The 25% drawings shall clearly detail, at a minimum:
 - Modified curb lines including curb cuts, lane functions and intersection geometries including any proposed bicycle accommodations;

- Sidewalk design and finishes, including trees and plantings, street lighting, benches, bicycle racks, trash receptacles, electric vehicle charging stations, kiosks and bus shelters;
 - Public plaza area programming and design, including trees and plantings, street and pedestrian scale LED fixture lighting, benches, bicycle racks and bike-share stations, trash receptacles, accommodations for possible outdoor cafes, and locations of public memorials;
 - Rain gardens and identification of tree pit design including the use of structural cells, materials for permeable sidewalks,
 - Traffic control equipment, signals and control boxes including signal phasing and timing plans, loop detector, video cameras and in-street sensors for real-time traffic counts and analysis, mast arm and control box locations, pavement markings, street name and directional signage and curbside parking regulations; and
 - Pedestrian ramps at all necessary locations within the limits of work (pedestrian ramps shall conform to MassDOT standards and designs approved by the Commissioner of Public Works).
- Submit plans in hard copy and electronic (pdf and AutoCAD, as requested) format.
 - The 25% Design shall meet the BTB Traffic Signal Design Submission Requirements Guidelines (Appendix B).
 - Prepare presentation level plans and assist in the presentation of the plans at public meetings as required.
 - Identify all necessary federal, state and local permits and approvals.
 - Working with public agencies and abutters prepare a Maintenance Costs and Agreement Plan with anticipated line-itemed annual costs and responsibilities.
 - Upon approval of the 25% Design by BTB and other city and state agencies as applicable, advance project to 75% Design.

Task 4. 75% Design Submittal

- Complete and submit the 75% Design per City of Boston requirements, MassDOT requirements and the requirements of other state and federal agencies such as MBTA and DCR with jurisdiction over certain design elements.
- Key elements include, but are not limited to:
 - Written response to City of Boston's 25% and state agency review comments;
 - Construction plans for all features identified at the 25% Design Submittal, including roadway plans, streetscape layout and material plans, grading plans, pavement marking plans, and traffic signal plans; drainage plans, utility plans, signage plans, planting plans, irrigation plans, and all associated details;
 - New and/or updated cross sections;
 - Coordination of utility locations and areaways with appropriate entities as needed;
 - Line-item detailed cost estimate, with unit costs; and
 - Preliminary draft of specifications and special provisions.
- Submit the 75% Traffic Signal Designs per the BTB Traffic Signal Design Submission Requirements (Appendix C).
- Submit final right-of-way plans with the title sheet, parcel summary sheets, location maps, and property plan sheets for affected areas.

- Submit spot taking plans, as required.
- Prepare renderings and assist in the presentation of the renderings and plans at public meetings, as required.
- Prepare drawings for the Public Improvement Commission's (PIC) approval.
- Submit applications for all necessary federal, state and local permits and approvals.
- Upon approval of 75% Design by the Public Improvements Commission, MassDOT if necessary, and state and federal agencies with jurisdiction on specific design elements such as MBTA or DCR, advance project to 100% Design.

Task 5. 100% Design Submittal and PS&E Design Package

- Complete 100% PS&E Design Package per City of Boston requirements, MassDOT requirements, and requirements of the applicable state and federal agencies such as MBTA and DCR with jurisdiction over certain design elements.
- Key elements include, but are not limited to:
 - Respond in writing to the City of Boston's and state agencies 75% review comments.
 - Finalize construction plans, inclusive of cross sections, streetscape plans, and traffic signal plans. 100% traffic signal plans should be submitted per BTG Guidelines (Appendix C).
 - Finalize cost estimates and special provisions.
 - Submit Construction Plans to Utilities engineer and BTG's Construction Management Section.
 - Assist in the presentation of the plans at public meetings as required.

Task 6. Bid Documents and Support

- Prepare final bid package.
- Assist City of Boston during the bidding phase.
- Attend pre-construction conference and prepare memorandum of meeting.
- Respond to contractor questions during the bid phase. Prepare addenda as needed.
- Review and evaluate bids received for construction and submit to the Department a recommendation as to the award of all construction contracts.
- Prepare conformed contract and specifications, incorporating any bid period addenda.

Task 7. Construction Phase Services

- Review schedules, shop drawings, other submittals.
- Respond to Requests for Information (RFI's).
- Review Value Engineering Change Proposals.
- Prepare change orders as needed.
- Attend bi-weekly construction meetings.
- Prepare construction observation reports.

- Certify work done by the contractor.

Task 8. Public Improvement Commission and Other Agency Submissions

The Consultant shall prepare drawings and reports when and as required for submission to the Public Improvement Commission or any other agency. Such documents shall include, but not be limited to, approval plans, taking plans, specific repair plans, widening plans, easement plans, and, when directed, damage estimates and engineering reports. Plans required because of Public Improvement Commission orders shall be in hard copy and/or media as directed by the Public Improvement Commission.

Task 9. Public Process and Agency Coordination

This project will be informed by an extensive public process involving open public meetings and meetings with task forces, residents, businesses, community and advocacy groups. The project also requires coordination with City departments, other public agencies, and utility companies. This process will be managed by the BTB / City of Boston. The City will determine the schedule, advertise and host all the public meetings. The consultants will be required to attend and make presentations at public meetings. The provision of materials for posting on the Project Website will be required. (Note that day-to-day management of the website will be provided by the City of Boston)

Additional meetings with abutting property owners directly impacted by any right-of-way design work may also be required.

As a minimum, services will include the following:

- 1. Meetings with Public Agencies and/or Utility Companies in addition to BPWD and BTB:**

This includes coordination with Boston Water and Sewer Commission, Boston Parks and Recreation Department, Boston Street Lighting Section, Mayor's Office of Neighborhood Services, Boston Bikes Program, Boston Fire Department, Disabilities Commission, Mayor's Office of Environment and Energy, MassDOT, Massachusetts Historic Commission, MBTA, DCR, and any other public agencies in which approvals are required. Coordination with private utility companies will be required. The number of meetings will be as necessary to coordinate and determine locations, impacts, and recommendation to minimize the impacts the improvements could have on the various utilities. Assume up to twelve (12) interagency and/or utility coordination meetings.

- 2. Public Community Meetings:** Up to seven (7) are to be included. In addition, it is anticipated a minimum of twelve (12) meetings will be necessary with abutters and stakeholders.
- 3. Meetings with BTB:** In addition to the above noted meetings, include semi-monthly staff meetings with BTB for project management purposes.
- 4. Meetings with Public Improvement Commission:** At least six (6) meetings including public hearings with the Public Improvement Commission are assumed.

VI. COORDINATION WITH CITY STANDARDS AND PROGRAMS

A. Transportation

All proposed designs and analysis must be developed in accordance with the BTB's Traffic Signal Operations Design Guidelines and Traffic Signal Design Submission Requirements. Upon approval all AutoCAD, Synchro and other files will be submitted to BTB in electronic format and as hard copies.

The 25% Design will include approved roadway and intersection alignments and geometries, lane functions including any bicycle accommodation, location of traffic control equipment including signals, and other details such as curb cuts and location of crosswalks.

The tasks will include proposing a safe and efficient traffic signal phasing and timing plan. After 25% plans are approved, the consultant shall prepare 75% plans and specifications to be approved by BTB prior to submittal of 100% plans.

Opportunities for multi-space meters, electric vehicle charging stations, video cameras, in-road sensors and tags will be explored and installed and designed in consultation with the Boston Transportation Department and the Department of Innovation and Technology.

B. Lighting

Lighting will play a key urban design role in creating consistency of design and a sense of place in the Melnea Cass Boulevard corridor. Any and all proposed changes and/or additions to existing City of Boston Street Lighting elements will be coordinated with BPWD's Street Lighting division. In addition, all designs shall be in accordance with City of Boston Street Lighting Standards.

C. Utilities

The Melnea Cass Boulevard project may require utility re-engineering or disruption, including location and reconnection of catch basins from existing sewers into drains, remodeling of drainage structures at surface levels and possibly relocating hydrants. The selected design team and its engineer will be required to coordinate with the Boston Water and Sewer Commission and appropriate utility companies during the design phase with regard to proposed utility disruption or relocation. The approved 25% Design will include written communication with all impacted utility companies to identify any changes required to existing utility alignments and locations.

D. Landscape: Street Trees and Plantings

The design team will be responsible for developing an overall landscape approach for the Melnea Cass Boulevard project including examination of above and below-grade utilities to determine feasible locations for street trees, determination of the viability of a 'treeway' and the use of structural cell tree-pits, selection of appropriate tree species, and tree planting specifications, as well as alternative planting options where street trees are not feasible. The use of rain gardens or similar features to accommodate storm water run-off will be required. The overall landscaping plan should be coordinated with the lighting, wayfinding, art, and street furniture programs.

For street trees, contract requirements include:

- Species selection and final locations;